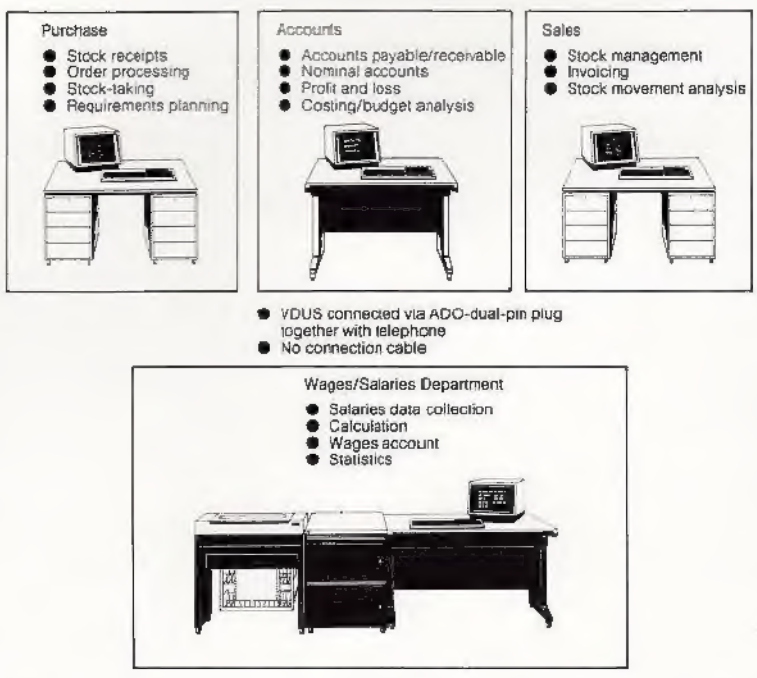
Nixdorf 8870/1 and 8870/3 Magnetic Disk System

NIXDORF
COMPUTER

The proper place for the computer is At the place of work

Electronic data processing is designed to simplify administrative and manufacturing procedures, to speed them up and to produce a better cost: efficiency ratio than any other mode of rationalization. It also enables new and more advanced techniques to be implemented.
Small and medium-sized companies need to consider the introduction of a computer just as much as do large enterprises, organizations and public administrative services, because, in spite of many attempts in the past to find means of rationalisation and put them into practice, companies of all sizes today have a great deal of scope for increased productivity.
In view of the constant pressures of increasing costs, the computer industry can offer both groups an extensive range of products which simplify and rationalize work schedules in their particular organizations. Of focal interest to the medium-sized user are the comprehensive solutions namely data processing systems, with the relevant organizational procedures. Technological developments and steady improvements in the cost: efficiency ratio have created these sophisticated computer systems able to adapt themselves so easily to the tasks and circumstances of a given company, to oust conventional methods of organization and to replace "primary" computers, such as the invoicing and magnetic ledger card systems.

Example of workstation-oriented application with the Nixdorf magnetic disk system 8870



where it is needed:

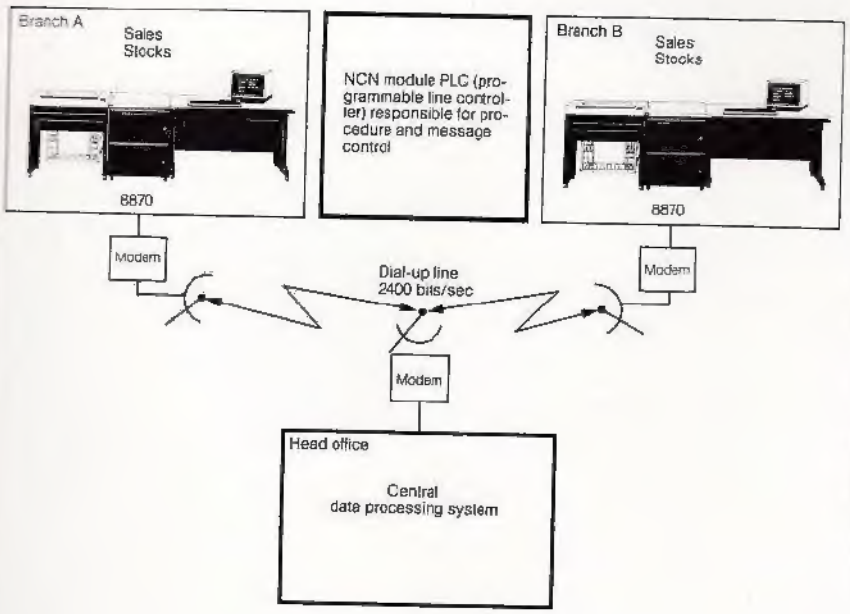
In large enterprises the centralised organization is steadily giving way to the more rational separation of centralised and decentralised EDP activities. One refers here to "Distributed Processing". The nature of distribution in the large companies and organizations depends on the particular tasks and requirements. In most cases, rationalization will be concentrated on achieving higher productivity and more favourable relations to cost through the effective use of all financial, personnel and mechanical resources. One example of this is the automation of monotonous manual jobs by using computer systems and there by increasing efficiency at the place of work. This is possible through the use of information and communication systems which provide a firm foundation for decision-making at all levels within the company, reduce the elements of risk in decision-making, improve the flow of information and prevent information getting lost.

In order to solve organizational problems the user will therefore decide on workstation-oriented data processing systems. The user's increasing need for active support at his place of work with electronic data processing has paved the way for workstation-orientation in the world of computer applications.

As the universal assistant to office staff, the computer at the office desk deals fully independently with jobs where the data arises, where it is needed, and not somewhere else. At the same time, the computer connects the individual workstations to a company-wide, in-built information system. The computer thereby becomes one of the most important tools of company management in that it provides up-to-date information on the course of business, on the materials input and on the cost situation, which enable well-judged and far-sighted company management.

Another advantage of the computer at the office desk is that it can take on what are basically simple but also crucial new methods of organization and administration geared to the future, without, however, causing organizational upheavals or necessitating special knowledge of electronic data processing, special accommodation or climatic conditions.

Remote data processing with the NCN concept
Data transmission in batch mode



The Computer which isn't too big or The system computers 8870/1 and

The concept: Progressive

The 8870 Nixdorf magnetic disk system meets all the essential needs of modern organizational methods. In small and medium-sized companies it forms an independent data processing system and in large companies is designed for distributed processing. For both areas of job specification, the operational and technical integration of data collection and data processing, and the up-to-date information service are of crucial importance to the philosophy behind the system. Moreover, an extensive range of direct-connection peripheral units and highly competent disk memories back up the extremely efficient and compact hardware of the 8870 system.

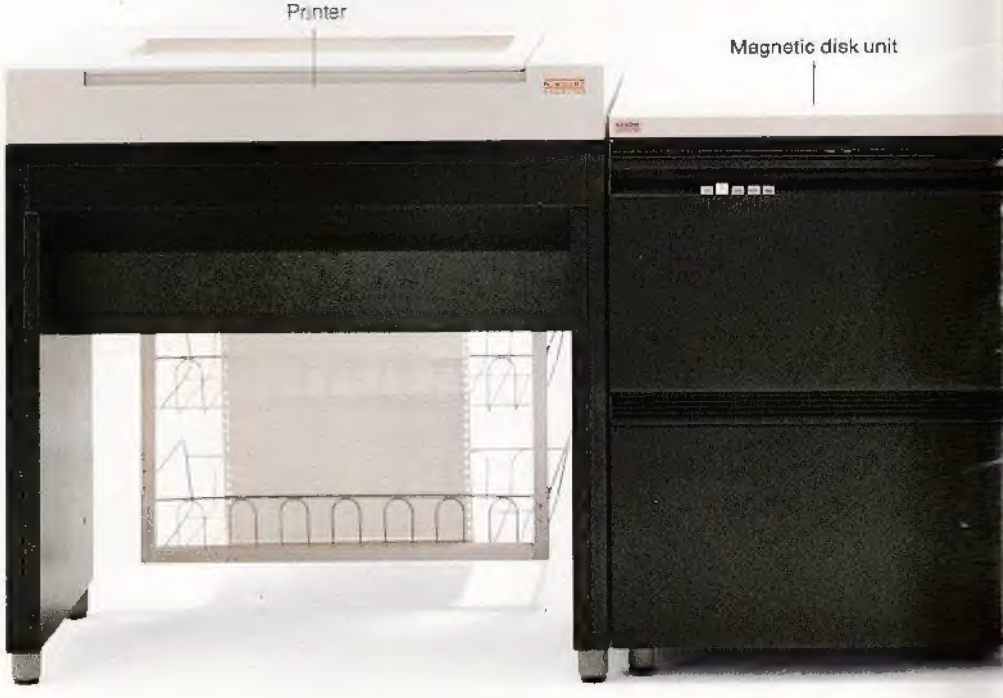
The operation: Uncomplicated

Nixdorf applies the advantages of modern computer technology to achieve not only fast computer operations and access times but also simple operating functions. This is demonstrated by the uncomplicated method of operating the 8870 magnetic disk system. The result is that anyone can use this system — it is not necessary to have a special knowledge of EDP. In direct conversation between the user and the system, each operational step is specified and the operator is guided through the application.

Working with this new technology could not be simpler. The user needs only concern himself with a few elements of the computer, for example:
The display: The conversation between computer and operator is by means of the display. Everything of importance for smooth operation can be read from the display screen, and office staff are given directives from the screen which tells them what they should do when working with the computer.
The keyboard: Through the keyboard data is input and selections are communicated to the computer.
The printer: This enables required data to be printed.
Backing stores: These are used to store data and programs.

The fields of application: Diverse

Depending on the size of the company and the scope of the individual tasks to be performed the 8870 can be used equally well as a single-station or as a multi-station system. The latter permits the connection of up to sixteen computer workstations to the central processing unit. Depending on the tasks involved a maximum of 8 peripheral units may be connected to the multi-station system. This version of the 8870 allows the users to operate simultaneously all the workstations connected. There is no waste of time because data collection and processing take place simultaneously at each workstation in conversation mode with the system.
Together with this, it is also possible to access the master data from several user workstations at the same time.



too small for any company: 8870/3

The adaptability: Optimal

The Nixdorf 8870 magnetic disk system can be adapted to suit any type of set-up in all sizes of companies. It may be used for data processing in interactive mode as well as for batch data processing. For EDP on-line networks, the 8870 is fitted with a remote data processing control module.

The capacities: Modular extensions

With the ability to connect additional peripherals and the possibility of exchanging or adding memory units to the system, the computer can always adjust itself to the demands of a different or an expanded job structure. The future expansion of the company is taken into consideration right from the start! In its design and capacity, the system 8870 is programmed toward the future, it grows in line with the requirements of the company.

The availability of information: Always up to date

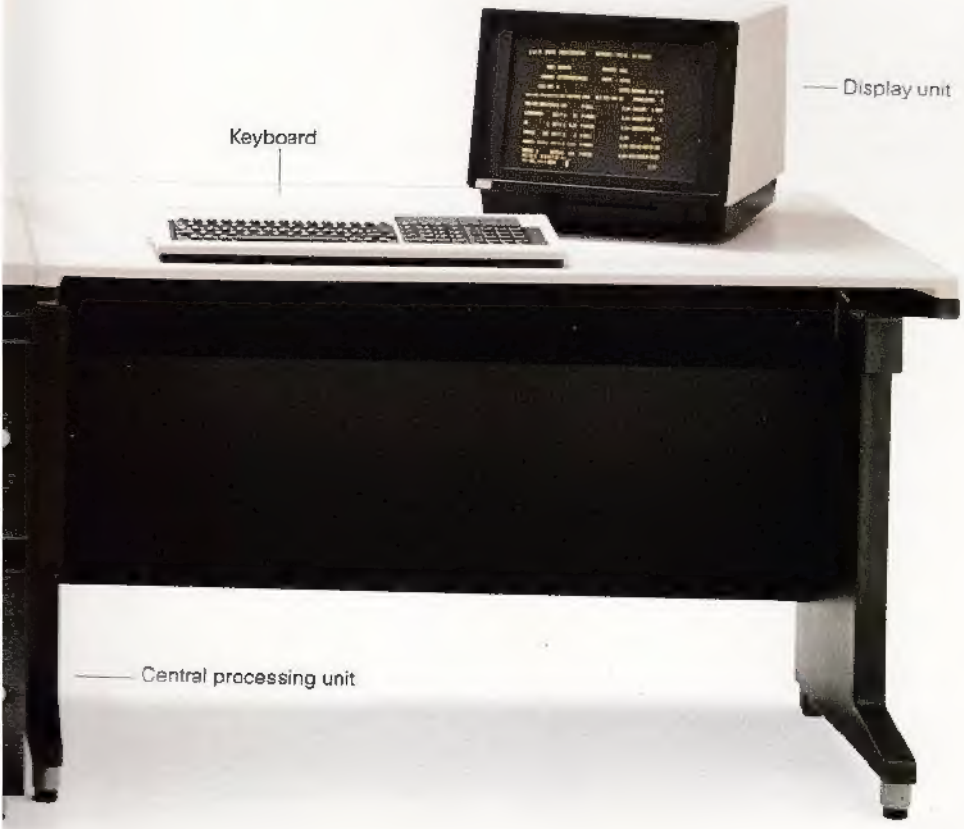
Operation in conversation mode is now the most popular form of data processing. Its great advantage is that information is always readily obtainable because of the permanent opportunity to access current data files on the magnetic disk. This benefit applies equally to single and multi-station systems, since with distributed processing, each display workstation is able to access centrally-maintained files independently of one another.

The security: In-built

To prevent any computer user from having free access to all data through his workstation, the 8870 magnetic disk system contains several in-built security features. For instance, each user must identify himself to the system with a password. This ensures that only authorized personnel have access to files and programs.

The software: User-oriented

An efficient data processing system is only capable of rational and constructive operation when backed by effective software. For this reason, the 8870 system is supported by an extensive range of programs. These include the conversation-oriented operating system NIROS, the user system TAMOS and a number of utilities geared to handle routine jobs. The 8870 is programmed in the quickly-learned Business BASIC language. The program package COMET with its application benefits has been specifically developed for use in medium-sized companies to handle important functions such as the general ledger, order processing and invoicing, stock control, production organization, payroll, graphics and word processing. The individual requirements within the given company are taken care of by the software generator CHICO.



This Computer shows what it knows

The display workstation

One of the most important features of the 8870 magnetic disk system is the display workstation. It comprises a display screen and a keyboard. Depending on the tasks involved, this type of workstation can also be extended, for example by adding a printer.

Display workstation on an office desk

Display workstation with height-adjustable desk

The screen

The screen, or the window to the computer, has the following functions:
It acts as an intermediary for conversation between operator and system;
It guides the operator along in a logical sequence;
It notifies the user of incorrect entries and informs him when an entry is missing — because each input is prompty followed by a data check and correction can be effected immediately if necessary. The rapid access to stored data provides ready information — clear and up to date, without noise, paper or lists. For example, information as to stock quantities; which customer has paid what and when? which customer has not yet paid? which supplier is to deliver what and when? etc. By the way, all jobs carried out during the day are recorded in a log file on magnetic disk and can be called up whenever needed. This means that each member of staff has full details of his daily work on demand.
The display workstations can more or less be arranged to suit the individual requirements of the user. For organizational and technical reasons, display workstation no. 1 must stand close to the central processing unit. The remaining display workstations, however, can operate at a distance of max. 2000 m from the CPU regardless of where this may be — for instance, with desk-top models, on the desk of the office staff, or on height-adjustable desks which fulfil all ergonomic requirements.
The quality of the picture image also lives up to the most recent demands of ergonomists and work psychology experts. The screen does not dazzle, the characters are well contrasted, the brightness can be regulated and so adjusted to suit the surrounding conditions. There is no flickering, no shadows — in short, this type of screen prevents tiredness from overcoming the user.

Operation: As simple as typing

The keyboard

Data is keyed into the system via the keyboard. This causes the operator no problems – he is dealing with a very familiar object. The keys on this keyboard are set in the same internationally accepted way as on any standard office typewriter.
In addition, there are some function keys. These additional keys call up certain functions for the user and utility programs. The significance of the individual keys is multi-functional. For example, the keys may perform the following:
Calculation with positive or negative sign
Calculation with discount rates
Regulation of forms
Control of individual corrections:
Either field correction (jumps backward from field to field) or record correction (moves back by a full record).
The keyboard is used for inputting data to the computer, asking questions of the computer, issuing instructions and switching the computer system on and off. All data keyed-in appears immediately on the screen. Errors are displayed on the screen or are indicated by an audible warning signal. They can be corrected by keying over the text again. All functions and all operative decisions are simple and clear.
Like the display screen, the keyboard is portable and can therefore be placed wherever it is needed.
The slight slant of the keyboard surface and the ability to adjust its position to suit each individual allows comfortable, non-tiring operation.

The functions

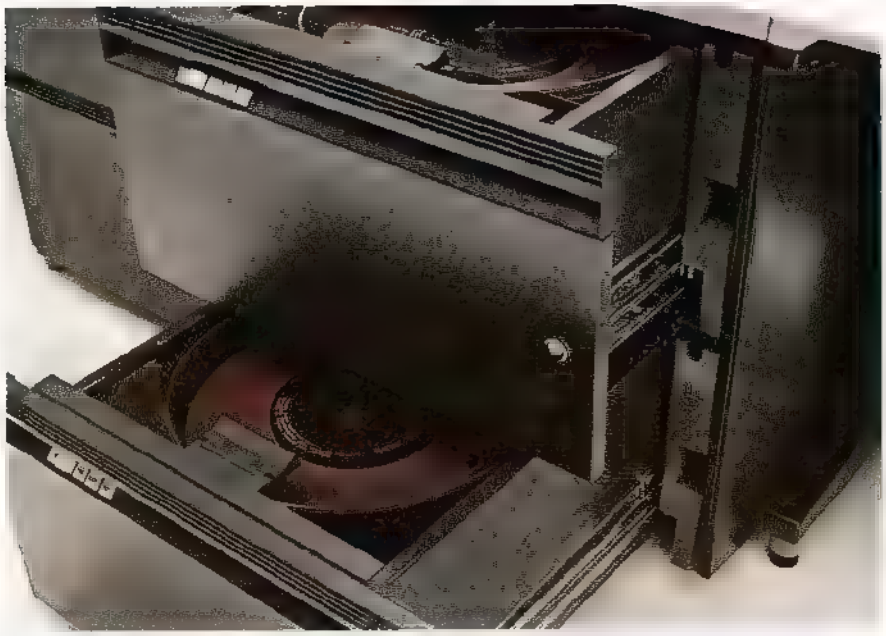
The method of operation at each display workstation can be adapted to suit the requirements of the given application. This means that all display workstations can work together on a joint program. For example, incoming payments can be posted at all workstations concerned under direct access to the same file.

Nixdorf 8870 system computer with three display workstations

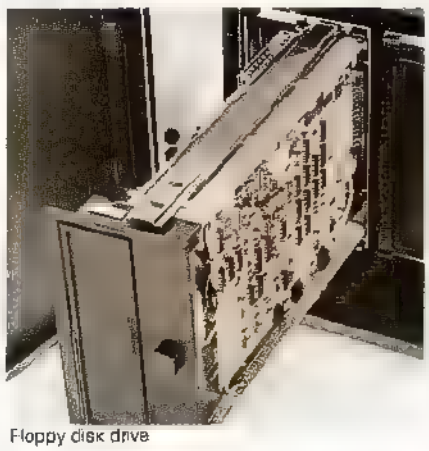
Each workstation runs an independent program for different applications. The multitasking facility, ie multi-program operation, provides the means for this type of operation. Example: display workstation 1 handles the posting of incoming goods; workstation 2 collects orders; workstation 3 records payments received. This is all effected in direct dialog mode with the computer. Time is precious — and the simultaneous operation of several workstations with the computer saves time. In addition the required results are available faster — and the centrally-stored data is permanently up to date.

The backing stores

With the 8870 system, programs and data are stored on backing stores which are selected according to type and capacity to suit a particular job structure. The most important data carrier is the magnetic disk. This acts both as a central storage medium and as a permanently accessible data bank. It is available with various storage capacities, up to 264 megabytes. Thus, the user always has sufficient memory space to handle the given data quantities.
To give an example of these storage capacities, up to 4167 full sides of DIN A4 pages can be stored on a magnetic disk of 10 megabytes capacity.
The diskette is a small, flexible magnetic disk contained in a protective sleeve. It requires a special drive which is incorporated in the lefthand side of the desk of display workstation no 1. Being so easy to handle, the diskette is particularly well suited for data exchange i.e. the transfer of data to the mainframe, or from another data processing system to the 8870.
The magnetic tape has the advantage of being able to store large data quantities in a very small space, and of calling them up again at very high speeds. It is an inexpensive medium for carrying mass data. The magnetic tape is also suitable for data exchange.
The magnetic tape cassette is a safe, easily moved, low-cost data carrier with extensive storage capacities, but requiring very little space itself. Up to 300,000 bytes, i.e. 125 DIN A4 sheets can be stored on one cassette
Exchange of data is equally possible with the cassette.
It is therefore the function of the backing store not only to store data and thereby produce a more or less extensive information bank,



Magnetic disk drive



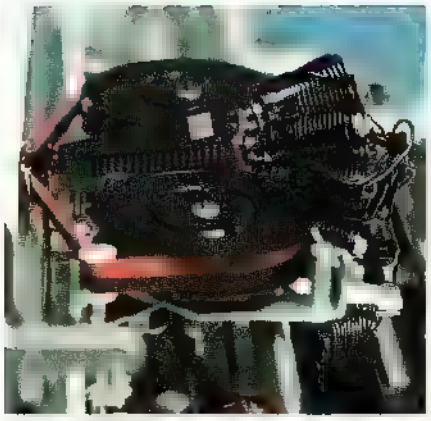
Floppy disk drive

Magnetic tape unit

but also to enable the exchange of each bank with other Nixdorf systems or with systems of other manufacture.
For his work with backing stores, the user can also avail himself of special utility programs, which manage the data and control input and output functions. This makes handling very easy for him

Magnetic tape cassette

The printers



Print head of the serial printer

Serial printer

Line printer

Printers of varying speeds and capacity can be connected to the 8870 magnetic disk system. Wherever data ist to be recorded on paper, the right printer for the job can be selected from the wide range available This may be the desk printer, operating in the office at the display workstation, or a centrally-operating serial or line printer Because the "right" printer or printers in each particular case can be installed in the "right" place, it is possible to
achieve perfect coordination in line with the requirements of a company, carry out the given tasks with optimum efficiency and avoid bottlenecks developing in data output The following printers are available

System printers

It is possible to connect two serial printers or one line printer and one serial printer to the 8870 system
The serial printer is a needle printer which prints character by character — at a speed of 150 characters per second
The line printer is used when higher demands are made on the printing rate. It prints line by line. These lines are buffered internally by the machine. The line printer prints at the rate of 18,000 or 36,000 lines per hour

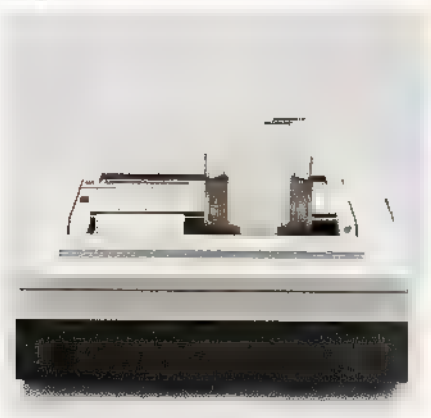
At the display workstation

This can take the form either of a matrix printer with a printing rate of 100 characters per second, or a letter quality printer printing at 45 characters per second

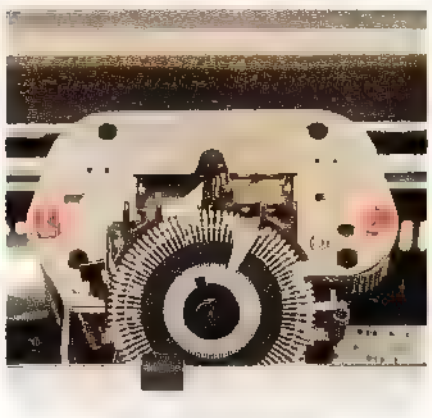
Additional units

In order to deal with all demands which may be made on an 8870 system in everyday operation, the system also provides for the connection of
plotter, weigher, punch tape peripherals OCR-A hand reader and remote data transmission equipment

Display workstation printer with form chute



Printing mechanism of the letter quality printer



The heart of the system: The central processing unit

The central processing unit, the core of the system, comprises:

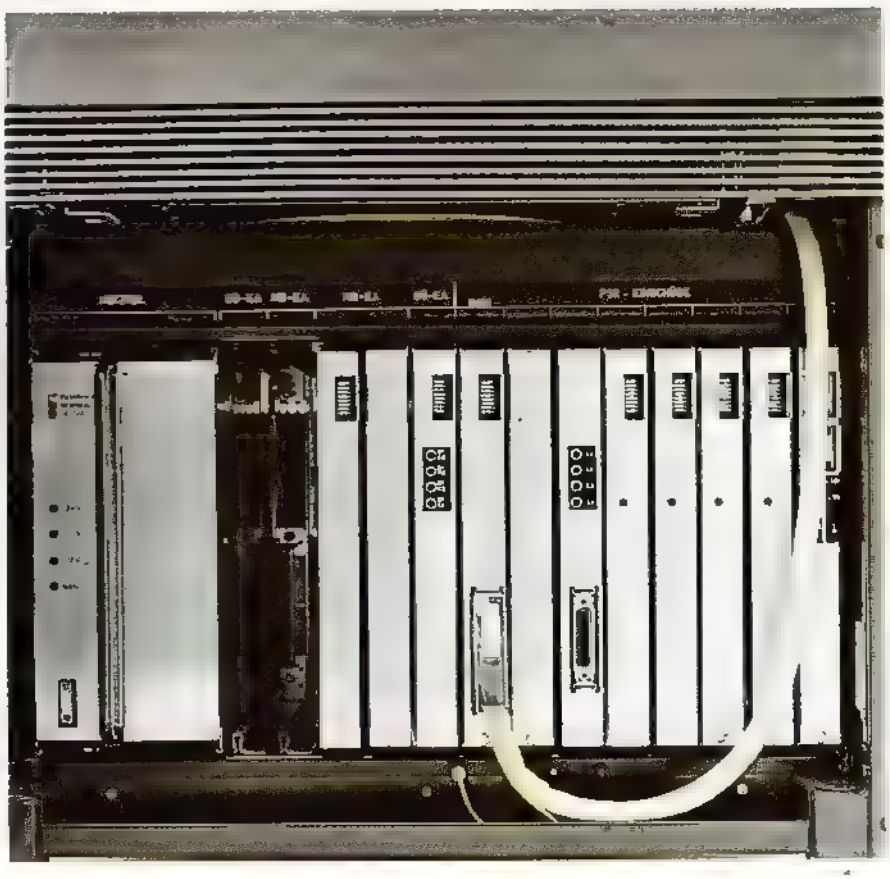
Chassis
Microprocessor
Main memory
Input/output control unit

The duties of the central processing unit (CPU) are clearly defined. They include the storage of user, system and utility programs and the execution of instructions contained in the system and main memories in the form of programs. At the same time the CPU controls the input of data and of individual instructions via keyboard and display, makes calculations, coordinates the storage of data in the main memory, sees to the storage of intermediate results and controls the application of the peripheral devices connected.
The most recent LSI technology is implemented in the central processing unit. The assembly modules of this technological level require very little space in spite of their high efficiency and can be positioned in the chassis in such a way as to allow easy servicing. Using modular plug-in units, it is possible to extend the electronic capacities at any time, allowing a wide variety of possible applications. For instance, it is possible to connect magnetic tapes, remote data processing units, and further printers for data output.
The microprocessor comprises the processor core and direct memory access unit. The logical and arithmetic functions (computing functions) are carried out in the processor, the active part of the system. It possesses in-built circuitry to translate the various instructions, and a logical circuit to interpret instructions from the peripherals connected. The processor thus combines high-speed internal processing in logical operations with a high degree of flexibility in controlling the devices connected.
The main memory contains the programs for interpreting instructions, the operating system and the programs to control the devices connected.
It also accommodates the application programs and data, and provides storage for intermediate results.
The input/output control unit controls the transfer of data between the CPU and the devices connected, and monitors the time required for input and output operations. The units are connected through two types of channel:

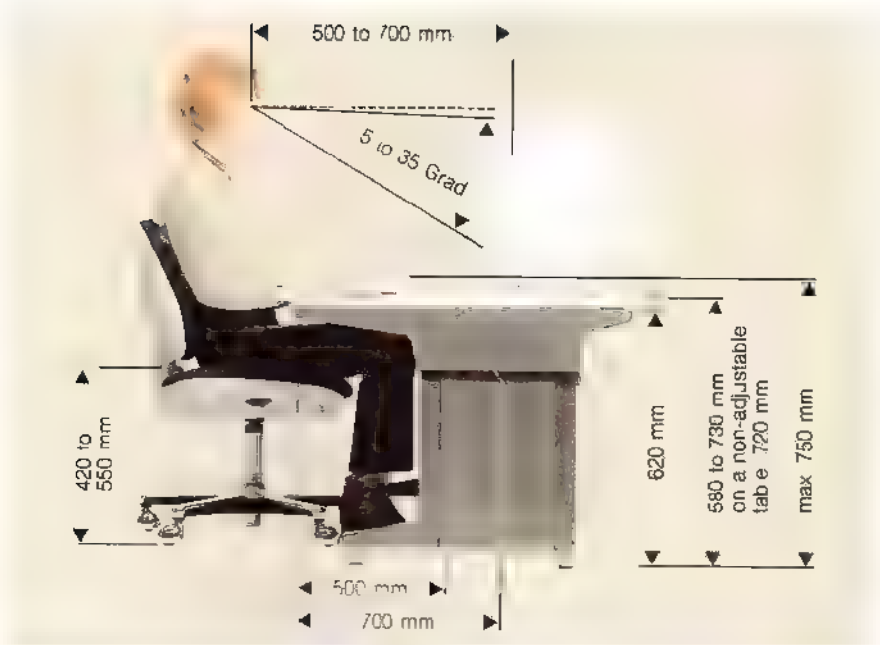
1. The multiplexer (MPX) enables simultaneous operation of various devices.
2. Direct memory access (DMA) enables the exchange of data between high speed peripherals (e.g. magnetic disk) and CPU, simultaneously with internal data processing.

An emergency power supply for the memory ensures that important information is not lost in the event of power failure. When power returns, the system resumes operation from the point of interruption.

A view of the CPU



Ergonomics



Ergonomics: A focal point

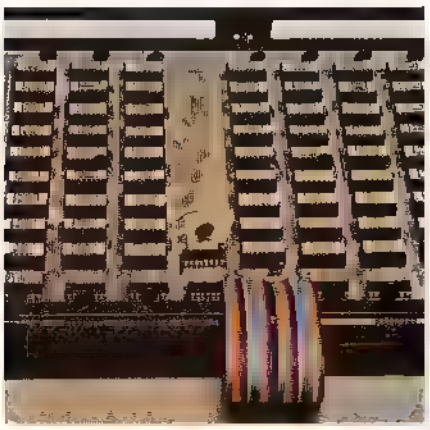
Extreme physical stress among employees working at computer terminals can be avoided to a very great extent if certain ergonomic principles and recommendations are followed in the organization of work, the design of the screen and keyboard, the design of the general workstation, and the ambient conditions. In constructing its systems, Nixdorf has followed the recommendations of ergonomists. As a result, displays, keyboards and desks are considered as a combined unit and are marketed as such. Special features, such as the height-adjustable desk, the non-reflecting screen surface, the practical position of the working surface

Display workstation with height adjustable desk

and the slim keyboard have been developed because Nixdorf Computer applied the conclusions drawn by ergonomists when designing its workstations.

The programs: The basis of a working system for the

Workstation-orientation and simple operating require a sophisticated range of system programs. Nixdorf has therefore developed a series of programs to make the 8870 system operate perfectly smoothly:
the operating system NIROS (Nixdorf Interactive Realtime Operating System) which simplifies the operation of the system and ensures that no problems arise during the flow of any system-controlled operations,
the monitoring system TAMOS (Terminal Auto-Operator and Monitor System)
The utilities programs which allow the computer to carry out certain routine functions without operator intervention



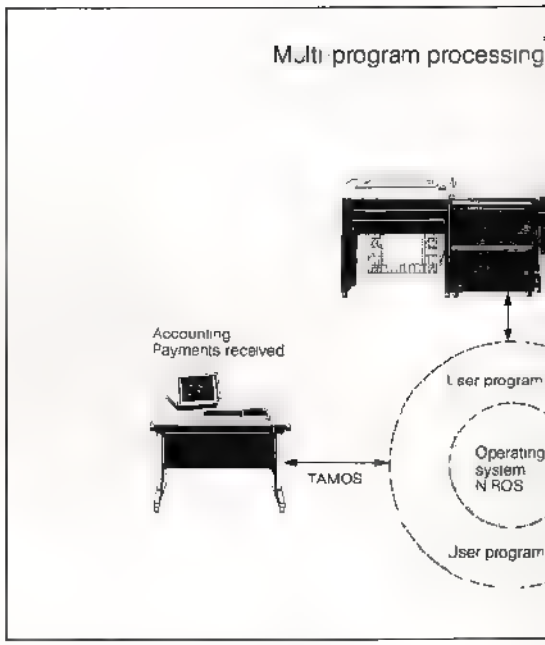
Memory

The operating system NIROS

controls and checks the many functions thereby helping to ensure the smooth flow of operation between CPU, peripherals, user programs and operator
For instance NIROS ensures that each of the display workstations connected can operate a different program at the same time. These programs are called up from the workstation in direct conversation with the computer.
NIROS controls the various display processing programs in time-sharing mode. Each user is allocated a certain unit of time during which the system is at his full disposal.
NIROS not only enables execution of the display workstation processing programs, it also allows batch processing. The effect of this is that the number of programs running can always exceed by one the number of workstations connected. An in-built test system in NIROS helps the user to test his programs. These tests, too, can be executed in direct conversation between computer and operator

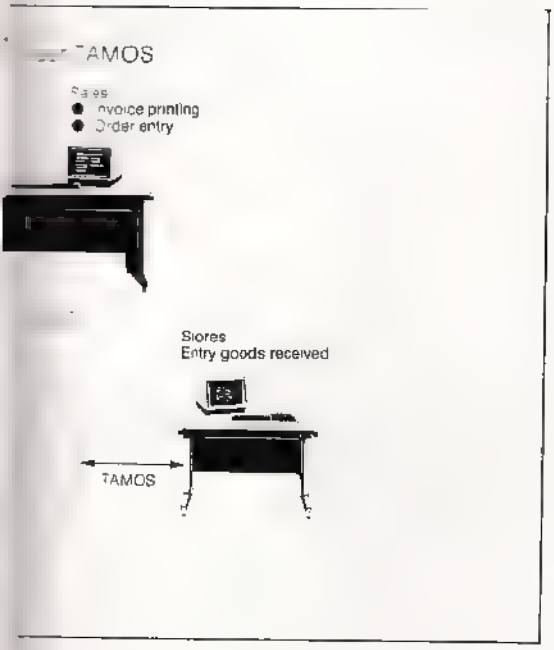
The user system TAMOS

provides support for the user by specifying on the display screen each individual step to be taken during operation.
In this way, TAMOS guides the operator step-by-step through the program. In addition, TAMOS makes sure that all programs run smoothly when the 8870 is being used by several users at the same time — possibly in different rooms. There is no need for a special time-table — this is all taken



care of by TAMOS. It is TAMOS's function to coordinate the jobs to be carried out simultaneously, to make sure that the time sequence is correct, to monitor program flow and to indicate the necessary means of trouble-shooting to ensure continuity of operation.
TAMOS also sees to the automatic security of programs and data volumes, saving the user a lot of trouble and time spent in dealing with data security. Data is automatically secured when one stage of operations has been completed on the basis of a 3-generation principle. The main operator is requested, through the display, to copy all backing stores in which the contents have been altered.
TAMOS also contains another security function. If at some time during the day, operation is interrupted (eg by power failure), TAMOS ensures that the user can continue operation from the point of interruption and that he is informed of the occurrence

user



The utilities

look after the execution of routine jobs. For instance, the conversion of data between all peripherals connected or the various processing steps connected with magnetic disk operation.

The programming language

The Business BASIC programming language allows the system 8870 to converse, to write and to run programs in the most advantageous manner.
It is easy to understand and simple in structure and can therefore be readily learned.
The system 8870/3 can also be programmed in COBOL so that there is no need for programmers who are used to working in COBOL to learn a new language.

The user programs

Nixdorf provides extensive program packages to cope rationally with a host of tasks. Take COMET, for instance, it contains special organizational solutions for users in medium-sized companies.
The most important spheres of application for these programs are:
General ledger
Order processing/invoicing
Stock control
Production organization
Payroll

FIMAS

was developed to facilitate the creation and maintenance of files and to ensure that interrogation can take place at any time. Using parameters which FIMAS requests in conversation with the user, files can be created or maintained at the display itself. To ensure that only validated data is input, the parameters can also be used to determine the rules governing validation.

SORBAS

In parallel with data input, specific output of data held in the files is achieved by SORBAS, whereby the printer acts as output medium or a new file is created on magnetic disk. Certain definitions are selected — the application of computing rules, the formation of batch totals and the editing of the print format with headings, spacing etc. With FIMAS/SORBAS each user quickly learns his way around the data processing system. The result is a wide variety of solutions with little study and programming.

CHICO

Great flexibility at acceptable cost levels. This is the main requirement of pre-prepared software systems. In the face of rising costs for individual programs, Nixdorf has adopted a new approach. The checklist generator CHICO was developed whereby the computer can automatically compare the relevant organizational methods for given customer requirements from the large number of program modules provided.
In the checklist the user specifies the sort key length and other information, sets variables, selects one of several possible processing modes and determines the flow sequence. CHICO then creates file structures and working programs.
There are two ways of establishing parameters to generate a program: on request the computer prints a questionnaire for the user. The answers to these questions are keyed in via the display keyboard, whereupon the system is able to draw up a program to suit the individual requirements of the user. Alternatively, the questions can be shown on the screen in direct conversation with the computer, answered and processed by the system to produce a complete program.
CHICO is so simple that no special knowledge of EDP is necessary for anyone working with the checklist generator.

Supplies

The Nixdorf solution is backed by an extensive range of supplies because smooth operation, free of disorder, depends not only on highly efficient computer systems but also on good support which can be relied upon and which allows orderly operation: for instance, data stores to suit the system, form sets, and universal cabinets, eg to hold the data stores in safety. A special Nixdorf brochure informs the prospective user of this comprehensive range of supplies.

The advantages at a glance

The system philosophy: Computer efficiency at the place of work

The idea behind the 8870 is based on two principles: workstation orientation and distributed computer processing. The efficiency of electronic data processing appears where it is needed: at the user's desk. Mass data can be dealt with quickly and correctly, and routine jobs become less tedious.
The advantages: rational operation, lower costs, permanent up-to-date information, increased productivity.

Single or multi-station systems

The 8870 can be used either as a single or as a multi-station system. The connection of several display workstations enables the system to handle a number of independent jobs at the same time. This is true not only for the collection of data, processing and evaluation, but also for making all necessary enquiries. For the user, the great advantage lies in the fact that each operator has the full range of computer facilities at his disposal without disturbing the work flow of other members of staff.
So, instead of having to wait for computer time in order to run the next job, individual jobs can be dealt with simultaneously.
The advantages: conversational processing from several workstations all having permanent direct access to computer facilities and data files.

Easy to operate

Particular attention was paid to simple operation of the system in order to make it easy to familiarize old and new personnel with it, i.e. by having tutorial operator guidance from the display screen. The result: no knowledge of EDP is necessary to operate the system. And because the computer itself validates data input (plausibility checks) the risk of error during data collection is reduced to a minimum.

Display workstation: Direct access to computer facilities

Computer facilities can be accessed direct from display workstations comprising keyboard and display as well as other peripheral devices which can be connected, for example, the printer.
The display:
Large screen, capacity 2000 characters, no fixed position, on height-adjustable desks
The advantages: provides a wide text image, paging of files is possible, there is no strain on the eyes, brightness can be adjusted, it does not dazzle
The keyboard: its concept meets all ergonomical requirements. It is slim in structure and has a practical, functional layout of the keys.

Display workstation with height-adjustable desk

Nixdorf 8870/3 system computer with four display workstations

The printers:
Several types of printer are available for connection to the 8870 system, all offering different printing facilities and speeds.
The advantages: the printing capacity can be adapted to suit the internal and organizational set-up of the company

Expandability

Extension of the system's capacity is easy, enabling increased demands to be met without creating the need for costly conversions. The 8870 is fully compatible in both hardware and software, from the minimum right up to the maximum configuration.

Remote data processing

The call for data communication with the EDP systems of other manufacture has been met by incorporating the programmable line controller (PLC) as part of the Nixdorf concept for remote data processing (NCN). This controller possesses an independent microprocessor system and loadable memory.

User-oriented operating system

Laymen can work with the computer without having an introductory period lasting weeks. The computer indicates what is to be done, guiding the user through the programs, step by step.

Error indications, either audible or on screen, provide security, while multi-tasking allows access to common data from several display workstations at the same time. All operations are also recorded in the daily log.

Sophisticated programming languages

The programming language Business BASIC is problem-oriented. Being clear and simple, Business BASIC is easy to use. The system 8870/3 can also be programmed in COBOL.

Modular program package COMET

Ready-to-use software is available for a large number of applications such as stock control, order processing, payroll, general ledger, production control, graphics and word processing.

Check-list generator CHICO

By using CHICO, the system composes an individual application program from a number of prepared modules in direct conversation with the user.

The advantages of the 8870 system computer

. . . for company management:
a uniform system of organization and information is built up throughout the company, providing ready information whenever it is required. The information on which present and future decisions are based is strengthened, bottlenecks in communication and flow of information are cleared, the costs reduced and the revenues increased.
. . . for members of staff at their desks:
complicated, time-consuming routine jobs no longer need to be done; the quality of work improves because of the direct availability of computer facilities; data input and output take place at the office desk. This means that information is always up to date, lists and card files become unnecessary, departments/specialist fields can be better managed.

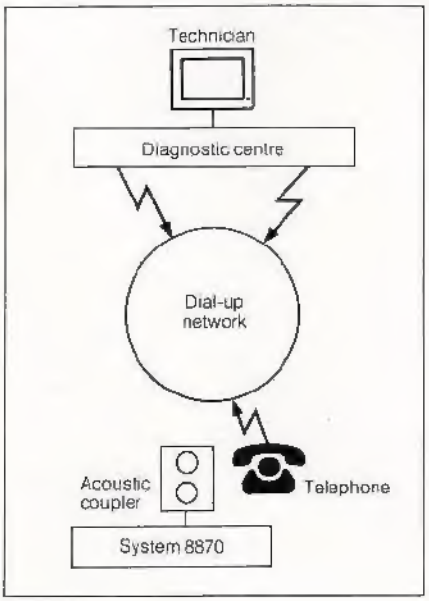
All the advantages point the way to Nixdorf

Each advantage speaks for itself. Each advantage argues in favour of having distributed computer operation at the office desk itself coupled with the possibility of decentralised as well as centralised access to data for evaluation and further processing. These advantages are all points in favour of the convincing philosophy of the 8870 system computer. Take the next step yourself.
Contact Nixdorf — we will give you full information and advice. Call your nearest Nixdorf branch or the Head Office in Paderborn.

The Nixdorf service guarantee

Nixdorf Computer AG fully identifies with the service requirements of the computer business. Service begins by assisting company management or the person responsible for setting up the new organization to answer such questions as when and for what purpose computers should be installed and in which departments. Your advisors in these discussions are systems analysts with experience of problems particular to a given application of industry. By working on an actual analysis they put forward a proposal based on the company's targets, they detail the computer systems and application programs capable of handling the given jobs, and they discuss how these would integrate with the existing pattern of company operation. For small and medium-sized companies in particular, this advisory stage can include analysis in terms of business management. Looked at in this light, you could consider Nixdorf one of the largest management consultant firms. We offer advice on questions ranging from the routine to the particular, and after the computer has been installed, our advisory service continues, for example by opening up new fields of application, so that the computer facilities grow with the development of the company – and activities are fully optimised.

Remote support makes sure that all your maintenance problems are solved at top speed.
Preventative maintenance for the 8870 is built up on a diagnosis package for which NIROS contains a diagnostic file and utility program for evaluating the data.
The diagnostic file is used for logging the errors which occur during system operation, recording all data necessary to specifically identify and analyse the fault.
The diagnostic file can then be transferred for evaluation to the remote support centre using a modem and the ordinary Post Office telephone network. Errors can often be corrected quickly and simply this way without a technician having to be called out.



The field engineering service has over 2000 employees and service centres exist over a worldwide network. The density of this network ensures that a user's call is rapidly answered. And, by simply replacing the defective module, repair times are reduced to a minimum.
Each country offers Nixdorf employees and customers extensive training courses at regular intervals. This regular schooling guarantees the user at any stage of computer implementation any assistance he may require, from qualified consultant staff equipped with up-to-date specialist knowledge.
The programs put into practice the organization and systems solution. They are standard packages, well-tried in practice and therefore easily transferrable to many other applications.
Other forms of application, however, may require modification, adjustment or extension.
Nixdorf advice is always available in such cases. To ensure the successful operation of the computer, Nixdorf offers a wide range of carefully-coordinated organizational aids. The introduction and training of your staff can take place either on site or in the local training centre, which boasts the latest design and equipment.
Lecturers are backed by audio-visual aids and recordings.
The combination of these facilities enables Nixdorf to install ready-to-use systems. The advantage of this is that everything can be supplied from one and the same source. The user deals with only one company – Nixdorf. And to round off the facilities, well-founded advice is available in matters of finance.
Nixdorf's own financing scheme provides companies with financial solutions with the "Purchase or Hire" of a computer system.

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